



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/879,783	06/12/2001	Barry Caldwell	01-183	9537

7590

09/03/2003

PETER P. SCOTT
INTELLECTUAL PROPERTY LAW DEPARTMENT
LSI LOGIC CORPORATION
1551 McCARTHY BLVD., M/S D-106
MILPITAS, CA 95035

EXAMINER

TRAN, THANH Y

ART UNIT

PAPER NUMBER

2841

DATE MAILED: 09/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/879,783

Applicant(s)

CALDWELL, BARRY

Examiner

Thanh Y. Tran

Art Unit

2841

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 July 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-11 and 13-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-11 and 13-48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 2-11, 26-33, 35, 41-42 and 45-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kambe et al (U.S. 5,938,979) in view of Lian et al (U.S. 6,327,145).

With respect to claims 2, 26 and 46, Kambe et al discloses an adhesive suitable (Fig. 6) to provide a bond between components, comprising: an adhering material (556) suitable for holding a first surface and a second surface in contact; and a plurality of items (554) disposed in the adhering material (556), the plurality of items (554) having electromagnetic capability (EMC) shielding characteristics (see col. 11, line 12 and lines 44-57), wherein an item of the plurality of items (554) includes a ceramic ferromagnetic material (col. 2, lines 56-57) and a magnetic shielding alloy (col. 11, lines 45-47).

With respect to claim 27, Kambe et al teaches that the magnetic shielding alloy includes metal oxides (see col. 1, lines 50-55). Although Kambe et al does not teach the magnetic shielding alloy includes Mu metals. However, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the shielding material of Kambe et al by including Mu metals for providing a high magnetic permeability material for the electronic device, since it has been held to be within the general skill of a worker in the art to

Art Unit: 2841

select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Lashin, 125 USPQ 416.

With respect to claim 3, Kambe et al does not teach the ceramic ferromagnetic material includes ferrite. However, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the ferromagnetic material of Kambe et al by including ferrite material for reducing the effects of the magnetic field, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Lashin, 125 USPQ 416.

With respect to claim 4, Kambe et al discloses an adhesive suitable (Fig. 6) wherein a quantity of the plurality of items (554, Fig. 6) disposed in the adhering material (556) is sufficient to provide EMC shielding between the first surface and the second surface (see Figs. 5-6, col. 10, lines 39-57, col. 11, lines 44-57).

With respect to claim 5, Kambe et al does not teach the first surface is included on an integrated circuit and the second surface is included on a heat sink. Lian et al teaches an adhesive (214), wherein a first surface of adhesive (214) is included on an integrated circuit (die 202) and a second surface of adhesive (214) is included on a heat sink (208). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the device of Kambe et al by including a first surface of adhesive is included on an integrated circuit and a second surface of adhesive is included on a heat sink as taught by Lian et al for improving the electronic device by reducing the over heat from the integrated circuit chip.

Art Unit: 2841

With respect to claim 6, Kambe et al does not teach items of the plurality of items are shaped to include at least one of a disk. Although Kambe et al does not teach items of the plurality of items are shaped to include at least one of a disk, sliver, hexagonal, triangular, parallelogram, oval, diamond, polyhedral and polymorphic. However, the exact shape of items includes at least one of “disk, sliver, hexagonal, triangular, parallelogram, oval, diamond, polyhedral and polymorphic” would have been obvious to one of ordinary skill in the art as a matter of engineering design choice since it is self-evident that it doesn’t matter as to which shape is selected as the final shape of the designed product. Further the exact shape doesn’t show any stated problem in so far as the record is concerned and therefore it doesn’t patentable distinguish the claimed invention over the applied reference. It appears that the shaped changes produce no functional differences and therefore it would have been an obvious matter of design choice.

Claims 28-30 recite limitations similar to claims 4-6. Therefore, they are rejected for the same reasons.

Claims 7-10, 31-33 and 41-42 recite limitations similar to claim 2, except for an item of the plurality of items is formed wherein a longest dimension of the item is equal to a distance between the first surface and the second surface. Although Kambe et al does not teach the exact **dimension or size of the item** as being less than or equal to a distance between the first surface and the second surface as that claimed by Applicant, the dimension or size differences are considered obvious design choices and are not patentable unless unobvious or unexpected results are obtained from these changes. Additionally, the Applicant has presented no discussion in the specification which convinces the Examiner that the particular dimension or size of **the item** is

Art Unit: 2841

anything more than one of numerous dimensions or sizes a person of ordinary skill in the art would find obvious for the purpose of providing support. It appears that these changes produce no functional differences and therefore would have been obvious.

With respect to claims 11, 35 and 45, they recite limitations similar to claim 2, except for a midpoint width of the item is equal to a distance between the first surface and the second surface. Although Kambe et al does not teach the exact width **or size of the item** as being less than or equal to a distance between the first surface and the second surface as that claimed by Applicant, the width or size differences are considered obvious design choices and are not patentable unless unobvious or unexpected results are obtained from these changes.

Additionally, the Applicant has presented no discussion in the specification which convinces the Examiner that the particular width or size of **the item** is anything more than one of numerous widths or sizes a person of ordinary skill in the art would find obvious for the purpose of providing support. It appears that these changes produce no functional differences and therefore would have been obvious.

3. Claims 13-25, 34, 36-40, 43-44, and 47-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lian et al (U.S. 6,327,145) in view of Kambe et al (U.S. 5,938,979).

With respect to claims 13, 16 and 39, Lian et al discloses an electrical system (Fig. 5) comprising: a first electrical component/integrated circuit (202) suitable for providing a function, the first electrical component/integrated circuit (202) including a first surface; a second component/heat sink (208) suitable for providing a function, the second component/heat sink (208) including a second surface; an adhering material (214) suitable for holding the first surface

Art Unit: 2841

of the first electrical component/integrated circuit (202) and a second surface of the second component/heat sink (208) in contact.

Lian et al does not teach that a plurality of items disposed in the adhering material, the plurality of items having electromagnetic capability (EMC) shielding characteristics, wherein an item of the plurality of items includes a ceramic ferromagnetic material and a magnetic shielding alloy. Kambe et al teaches an adhesive (Fig. 6) comprising a plurality of items (554) disposed in the adhering material (556), the plurality of items (554) having electromagnetic capability (EMC) shielding characteristics (see col. 11, line 12 and lines 44-57), wherein an item of the plurality of items (554) includes a ceramic ferromagnetic material (col. 2, lines 56-57) and a magnetic shielding alloy (col. 11, lines 45-47). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the electrical system of Lian et al by including a plurality of items disposed in the adhering material, and wherein the plurality of items having electromagnetic capability (EMC) shielding characteristics, wherein an item of the plurality of items includes a ceramic ferromagnetic material and a magnetic shielding alloy as taught by Kambe et al for the purpose of protecting the electronic component.

With respect to claim 14, Lian et al and Kambe et al do not teach the ceramic ferromagnetic material includes ferrite. Although Lian et al and Kambe et al do not teach the ceramic ferromagnetic material includes ferrite. However, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the combined references of Lian et al and Kambe et al by including ferrite material for reducing the effects of the magnetic field, since it has been held to be within the general skill of a worker in

Art Unit: 2841

the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Lashin, 125 USPQ 416.

With respect to claims 15, 17 and 38, they recite limitations similar to claims 4 and 6. Therefore, they are rejected for the same reasons.

With respect to claims 18-20, they recite limitations similar to claim 13, except for an item of the plurality of items is formed wherein a longest dimension of the item is equal to a distance between the first surface and the second surface. Although Lian et al and Kambe et al do not teach the exact **dimension or size of the item** as being less than or equal to a distance between the first surface and the second surface as that claimed by Applicant, the dimension or size differences are considered obvious design choices and are not patentable unless unobvious or unexpected results are obtained from these changes. Additionally, the Applicant has presented no discussion in the specification which convinces the Examiner that the particular dimension or size of **the item** is anything more than one of numerous dimensions or sizes a person of ordinary skill in the art would find obvious for the purpose of providing support. It appears that these changes produce no functional differences and therefore would have been obvious.

Claims 21, 34 and 43-44 recite limitations similar to claim 13, except for an item of the plurality of items is formed wherein, a smallest dimension of the item is equal to a distance between the first surface and the second surface. Although Lian et al and Kambe et al do not teach the exact smallest **dimension or size of the item** as being less than or equal to a distance between the first surface and the second surface as that claimed by Applicant, the dimension or size differences are considered obvious design choices and are not patentable unless unobvious

Art Unit: 2841

or unexpected results are obtained from these changes. Additionally, the Applicant has presented no discussion in the specification which convinces the Examiner that the particular dimension or size of **the item** is anything more than one of numerous dimensions or sizes a person of ordinary skill in the art would find obvious for the purpose of providing support. It appears that these changes produce no functional differences and therefore would have been obvious.

Claim 22 recites limitations similar to claim 13, except for an item of the plurality of items is formed wherein a midpoint width of the item is at least one of equal to and less than one-quarter of a distance between the first surface and the second surface. Although Lian et al and Kambe et al do not teach the exact **midpoint width of the item** as being less than or equal to a distance between the first surface and the second surface as that claimed by Applicant, the midpoint width or size differences are considered obvious design choices and are not patentable unless unobvious or unexpected results are obtained from these changes. Additionally, the Applicant has presented no discussion in the specification which convinces the Examiner that the particular width or size of **the item** is anything more than one of numerous widths or sizes a person of ordinary skill in the art would find obvious for the purpose of providing support. It appears that these changes produce no functional differences and therefore would have been obvious.

Claims 23 and 36 recite limitations similar to claim 13. Therefore, they are rejected for the same reasons.

With respect to claims 24 and 47, Lian et al and Kambe et al do not teach the plurality of items are formed having a length between 3 microns and 1 millimeter. However, it would have

Art Unit: 2841

been obvious to a person having ordinary skill in the art at the time the invention was made to modify the item's size in the combined prior art of Lian et al and Kambe et al by having a length between 3 microns and 1 millimeter for an item, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. (In re Aller, 105 USPQ 233 and In re Peterson 01/08/03). With respect to claims 25 and 48, Lian et al discloses an electrical system (Fig. 5) wherein the carrier material (214) is thermally conductive (see col. 1, lines 31-35).

With respect to claims 25 and 48, Lian et al discloses an electrical system (Fig. 5) wherein the carrier material (214) is thermally conductive (see col. 1, lines 31-35).

Claim 37 recites limitations similar to claim 27. Therefore, it is rejected for the same reasons.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Jiang et al (U.S. 6,011,307), Yahagi et al (U.S. 6,048,601), Nam (U.S. 6,025,651), Usami (U.S. 6,259,158) and Yoshida et al (U.S. 6,051,156).

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh Y. Tran whose telephone number is (703) 305-4757. The examiner can normally be reached on Monday through Thursday and on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin, can be reached on (703) 308-3121. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3431.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

TYT

A handwritten signature in black ink, appearing to be 'DM' or similar initials, written in a stylized, cursive manner.

DAVID MARTIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800